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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/788,431

02/27/2004

Scott A. Leman

27581/01367.1

7015

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09/14/2004

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EXAMINER

RIDDLE, KYLE M

ART UNIT

PAPER NUMBER

3748

DATE MAILED: 09/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/788,431	Applicant(s) LEMAN, SCOTT A.	
	Examiner Kyle M. Riddle	Art Unit 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2 and 9-11 is/are allowed.
- 6) ☒ Claim(s) 3-8, 12 and 15-20 is/are rejected.
- 7) ☒ Claim(s) 13 and 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>06012004</u>.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: ____.</p> |
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DETAILED ACTION

Drawings

1. The drawings are objected to because in Figures 7, 8, and 9, the y-axis title "VALUE LIFT" should read --VALVE LIFT--. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

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provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claim 3 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 4 of U.S. Patent No. 6,732,685. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 3 of the instant invention is essentially included in claim 4 of U.S. Patent 6,732,685. Claim 4 also contains more specific limitations. The sole limitation included in claim 3 of this application not included in claim 4 of the patent is moving the engine valve element to an open position, such is an obvious choice to one of ordinary skill in the art since the logical direction the valve element can move is toward the open position.

4. Claim 4 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 5 of U.S. Patent No. 6,732,685. Although the conflicting dependent claims are not identical because of their respective independent claims, they are not patentably distinct from each other because claim 3 of the instant invention is essentially included in claim 4 of U.S. Patent 6,732,685. Claim 4 of the patent also contains more specific limitations. The sole limitation included in claim 3 of this application not included in claim 4 of the patent is moving the engine valve element to an open position, such is an obvious choice to one of ordinary skill in the art since the logical direction the valve element can move is toward the open position.

5. Claim 5 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 4 of U.S. Patent No. 6,732,685 in view of Fuller, Jr.

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et al. (U.S. Patent 4,050,435) or Arrieta (U.S. Patent 4,423,709). Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 3 of the instant application is essentially the same as claim 4 of U.S. Patent 6,732,685, and it would be obvious to modify said claim 4 with the teachings of Fuller, Jr. et al. or Arrieta. Fuller, Jr. et al. teach a mechanically driven actuator and a fluidically driven actuator 30 adapted to hold an exhaust valve in a hydraulically locked intermediate open position (column 4, lines 22-34 and Figure 5) and having an actuator piston 66 and hollow piston 50 (column 4, lines 25-30). Arrieta teaches a mechanically driven actuator and a hydraulically driven cylinder actuator 96 adapted to hold the intake valve in an intermediate locked open position (column 5, lines 30-41 and Figures 4-5) and having a hydraulic cylinder 96 adapted to move a rod 95 (column 5, lines 31-35 and Figures 4-5). It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the teaching by Fuller, Jr. et al. or Arrieta in the valve system of claim 4 of U.S. Patent 6,732,685, since the use thereof would have provided a more specific means of maintaining the engine valve in an intermediate open position.

6. Claim 6 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 6 of U.S. Patent No. 6,732,685. Although the conflicting dependent claims are not identical because of their respective independent claims, they are not patentably distinct from each other because claim 3 of the instant invention is essentially included in claim 4 of U.S. Patent 6,732,685. Claim 4 of the patent also contains more specific limitations. The sole limitation included in claim 3 of this application not included in claim 4 of the patent is moving the engine valve element to an open position, such is an

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obvious choice to one of ordinary skill in the art since the logical direction the valve element can move is toward the open position.

7. Claim 7 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 7 of U.S. Patent No. 6,732,685. Although the conflicting dependent claims are not identical, they are not patentably distinct from each other because claim 3 of the instant invention is essentially included in claim 4 of U.S. Patent 6,732,685. Claim 4 of the patent also contains more specific limitations. The sole limitation included in claim 3 of this application not included in claim 4 of the patent is moving the engine valve element to an open position, such is an obvious choice to one of ordinary skill in the art since the logical direction the valve element can move is toward the open position. The sole limitation included in claim 7 of the patent not included in claim 7 of the application is the specification that the type of engine is an internal combustion engine, such is an obvious choice to one of ordinary skill in the art since most engines are of the internal combustion engine type.

8. Claim 8 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 8 of U.S. Patent No. 6,732,685. Although the conflicting dependent claims are not identical because of their respective independent claims, they are not patentably distinct from each other because claims 3 and 8 of the instant invention is essentially included in claims 4 and 8 of U.S. Patent 6,732,685. Claim 4 of the patent also contains more specific limitations. The sole limitation included in claim 3 of this application not included in claim 4 of the patent is moving the engine valve element to an open position, such is an obvious choice to one of ordinary skill in the art since the logical direction the valve element can move is toward the open position.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 12, 15-20 are rejected under 35 U.S.C. 103(a) as being obvious over Fuller, Jr. et al. (U.S. Patent 4,050,435).

Re claims 12, 15-18, Fuller, Jr. et al. disclose a valve control system comprising:

- a mechanically driven actuator including a cam 24 and a mechanical linkage through a rocker arm 18 adapted to move the valve between an open and closed position (column 2, lines 58-63, Figure 2, column 4, lines 9-21, and Figure 3);

- a valve seat and engine valve 20 adapted to move from the open to closed positions (column 2, lines 58-61);

- a fluidically driven actuator 30 adapted to hold the exhaust valve in a hydraulically locked open position (column 4, lines 22-34 and Figure 5);

- an actuator cylinder 30 in fluid communication with a source of pressurized fluid (column 3, lines 16-32 and column 4, lines 24-30);

- a valve control unit for an intake or exhaust valve (column 3, lines 7-10).

Re claim 19, Fuller, Jr. et al. disclose an actuator piston 66 and hollow piston 50 forming the parts of a fluid ram or jack to force the valve open (column 4, lines 25-30).

Re claim 20, Fuller, Jr. et al. disclose the source of pressurized fluid preferably being from the lubrication oil system (column 2, lines 17-20 and column 3, line 17).

Fuller, Jr. et al. fail to disclose the locked open position as an intermediate position. Fuller, Jr. et al. suggests the control device resulting in a shortened pushrod for holding the valves in an open position (column 2, lines 1-3). It is obvious that a shortened position would inherently be in an intermediate position between completely open and closed. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to that the suggestion of Fuller, Jr. et al. would include an intermediate locked position.

11. Claims 12, 15-19 are further rejected under 35 U.S.C. 103(a) as being obvious over Arrieta (U.S. Patent 4,423,709).

Re claims 12, 15-18, Arrieta discloses a method for operating a multicylinder engine comprising:

- a mechanically driven actuator including a cam 45 and a mechanical linkage through a rocker arm 37 adapted to move the valve between an open and closed position (column 3, lines 36-54, column 5, lines 21-38, and Figures 1, 4-5);

- a valve seat 35 and engine valve 30 adapted to move from the open to closed positions (column 3, lines 29-54);

- a hydraulically driven cylinder actuator 96 adapted to hold the intake valve in a hydraulically locked open position (column 5, lines 30-41 and Figures 4-5);

- a hydraulic actuator cylinder 96 in fluid communication with a source of pressurized fluid (column 5, lines 6-8 and Figures 4-5).

Re claim 19, Arrieta discloses a hydraulic cylinder 96 adapted to move a rod 95 and maintain the valve in the open position (column 5, lines 31-35 and Figures 4-5).

Arrieta fails to disclose holding the valve open in an intermediate position. However, the application of such would have been obvious depending on design variables such as desired timing and lift considerations, engine design, etc.

Allowable Subject Matter

12. Claims 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claims 1, 2, 9-11 are allowed.

Conclusion

14. The IDS (PTO-1449) filed on 1 June 2004 has been considered. An initialized copy is attached hereto.

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of 2 patents.

- Quenneville (U.S. Patent 5,000,145) discloses a compression release retarding system with a slave piston engaging the crosshead of the exhaust valves.

- Leman et al. (U.S. Patent 6,722,349) disclose an engine valve actuator system to hold the valves in an open position using a certain force that is different from a second force derived from a fluid rail system.

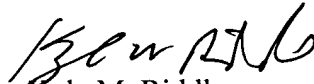
Communication

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyle M. Riddle whose telephone number is (703) 306-3409. The examiner can normally be reached on M-F (07:30-5:00) Second Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kyle M. Riddle
Examiner
Art Unit 3748

kmr



THOMAS DENION
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